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Before the  
Federal Communications Commission  
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the Matter of )  
 )  
Promoting Efficient Use of Spectrum )  
Through Elimination of Barriers to the )  
Development of Secondary Markets )

WT Docket No. 00-230

To: The Commission

**INITIAL COMMENTS OF ENRON CORP**

February 9, 2001

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Enron Corp ("Enron") hereby submits its Initial Comments in response to the Federal Communications Commission's (the "Commission's" or "FCC's") *Notice of Proposed Rule Making* ("*NPRM*") in the above-referenced proceeding.<sup>1</sup> As the Commission recognized both in the *NPRM* and in its recent *Policy Statement*,<sup>2</sup> radio spectrum available for commercial use is increasingly scarce, and therefore, it is necessary to encourage and enable more efficient utilization of existing spectrum assignments through the development of a more robust and competitive secondary market.

Setting forth a number of proposals, the Commission is seeking public comment on potential rule and policy changes in order to foster its objectives for spectrum for the Wireless Radio Services. Enron believes that the Commission's goal of creating more efficient spectrum use is commendable and appreciates the opportunity to participate in this proceeding.

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<sup>1</sup> *Promoting the Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets*, WT Docket No. 00-230, *Notice of Proposed Rule Making*, FCC 00-403 (rel. Nov. 27, 2000) ("*NPRM*").

<sup>2</sup> *Principles for Promoting the Efficient Use of Spectrum by Encouraging the Development of Secondary Markets*, *Policy Statement*, FCC 00-401 (rel. Dec. 1, 2000) ("*Policy Statement*").

Enron is a global energy and communications company that produces and markets electricity and natural gas; develops, constructs and operates energy facilities worldwide; delivers physical commodities and financial and risk management services to customers around the world; and has developed an intelligent network platform to facilitate online business. In November 1999, Enron launched EnronOnline ([www.enrononline.com](http://www.enrononline.com)), an electronic transaction platform that offers free, real-time pricing information for approximately 1,120 commodities, including electricity, natural gas, coal, pulp and paper, clean air credits, bandwidth, weather and credit derivatives, petrochemicals and plastics, metals, and oil and refined products. EnronOnline does not match buyers with sellers; instead, commodity consumers and producers around the world are able to instantaneously conduct transactions directly with an Enron company as principal.

Enron Broadband Services, a wholly-owned subsidiary of Enron, is a leading provider of high quality, high bandwidth delivery and application services. The company's business model combines the power of the Enron Intelligent Network<sup>(tm)</sup>, Enron's Broadband Operating System, bandwidth trading and intermediation services, and high-bandwidth applications to fundamentally improve the experience and functionality of the Internet. Enron's Broadband Operating System allows application developers to dynamically provision bandwidth for the quality of service necessary to deliver broadband content. Enron is creating a market for bandwidth that will allow network providers to scale to meet the demands required by increasingly complex applications.

## **I. EXECUTIVE SUMMARY**

With the experience Enron has gained in creating, fostering and dealing in secondary markets, the company has a unique perspective on the elements that are essential for the development of a successful secondary market in radiofrequency spectrum. While Enron supports the

Commission's initiative to promote a secondary market, it submits that success in this effort will require the Commission to be extremely innovative in the methods that it employs to allocate spectrum and to authorize the use of spectrum by parties other than the licensee. The Commission can encourage the creation of a truly free and efficient secondary market for spectrum, but certain aspects of the current regulatory regime must be reformed in order to accomplish this worthy objective.

As discussed below, the Commission can and should enact specific reforms that will, at a minimum, allow a secondary market to emerge. In particular, the Commission should relax its service rules as to the use of some portion of a licensee's spectrum; encourage price transparency; reassess and modify compliance responsibilities among the licensees and other users of the spectrum; minimize risks of non-compliance by licensees and spectrum users; reform and minimize reporting requirements; encourage the development in the private sector of a standardized contract; and implement a pilot program to test the operation of a fluid secondary market.

## **II. THE COMMISSION SHOULD ALLOW MARKET FORCES TO ENCOURAGE THE EFFICIENT USE OF RADIO SPECTRUM**

The Commission has consistently recognized that the public interest is best served when licenses are awarded more quickly to the parties who value them most highly.<sup>3</sup> Over the past few years, the Commission has led the world to recognize that, in spectrum licensing, market forces can often serve to advance public interest goals. This concept should be a cornerstone of spectrum management policy generally, and it can be successfully employed in the context of secondary

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<sup>3</sup> See, e.g., *FCC Report to Congress on Spectrum Auctions*, WT Docket No. 97-150, *Report*, 13 FCC Rcd 9601 (1997); *Implementation of Section 309(j) of the Communications Act — Competitive Bidding*, PP Docket No. 93-253, *Second Report and Order*, 9 FCC Rcd 2348 (1994).

markets for spectrum. Allowing these rights to flow freely to the parties who, at any particular time, exhibit the highest demand will spark the development of new applications for spectrum and help the United States maintain its role as the world's technology leader. In addition, allowing licensees to market spectrum will create incentives for them to use their licensed spectrum more efficiently. Finally, the creation of a fluid secondary market for spectrum will foster the continuous development of innovative technology, a goal of special significance in today's business environment where nationwide consolidation and mass marketing are the norm. Such an approach is also consistent with the Congressional mandate, set forth in Sections 309(j)(4)(C) and (D) of the Communications Act, that the Commission ensure that small businesses and others "are given the opportunity to participate in the provision of spectrum-based services . . . ."<sup>4</sup>

With the assistance of federal and state governments, market-makers are well-positioned and equipped to determine where and how spectrum can be most efficiently used. The efficiencies created by permitting market forces to allocate resources have been demonstrated in the natural gas and electricity industries, and market forces are now providing for more efficient allocations of wireline bandwidth on both a long-term and short-term basis among potential users. The

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<sup>4</sup> 47 U.S.C. §§ 309(j)(4)(C) and (D) state:

(4) Contents of Regulations. In prescribing regulations pursuant to paragraph (3), the Commission shall

(C) consistent with the public interest, convenience, and necessity, the purposes of this Act, and the characteristics of the proposed service, prescribe area designations and bandwidth assignments that promote (i) an equitable distribution of licenses and services among geographic areas, (ii) economic opportunity for a wide variety of applicants, including small businesses, rural telephone companies, and businesses owned by members of minority groups and women, and (iii) investment in and rapid deployment of new technologies and services;

(D) ensure that small businesses, rural telephone companies, and businesses owned by members of minority groups and women are given the opportunity to participate in the provision of spectrum-based services, and, for such purposes, consider the use of tax certificates, bidding preferences, and other procedures;

Commission's secondary market initiative, if properly focused, should similarly enable spectrum usage to be more efficient, while reducing the need for regulatory bodies to make difficult choices among competing claims to the spectrum in each allocation proceeding.

### **III. COMMODITIZATION AND ITS BENEFITS**

Enron's experience in other secondary markets has demonstrated that the essential element in allowing such markets to function efficiently is the existence of an identifiable product unit available from multiple, fungible sources, which is easily commoditized. For example, in the electricity industry, that unit is a megawatt; for natural gas, it is a BTU; and for oil, it is a barrel. Even in the emerging bandwidth market, there are relatively simple measures of capacity (*e.g.*, DS-3, OC-3) that are generally fungible across different networks. For the most part, this assures aggrieved parties that, if there is a failure to deliver the product, a claim for liquidated damages can be measured by the cost of obtaining that product from an alternative source and accounted for in a standardized contract between the buyer and the seller.

Although Enron trades in numerous products, it is appropriate to analogize the Commission's current efforts to activities involving natural gas and electricity, as the federal government facilitated the development of secondary markets for both products by deregulating those elements which allowed for commodization to take place. With regard to both electricity and natural gas, the Federal Energy Regulatory Commission ("FERC") required unbundling of the commodity supply portion (*i.e.*, electric generation and gas supply) from transmission, while retaining a level of regulation over the transmission sector. By providing competitive opportunities for the supply of these commodities, FERC encouraged and enabled the development of secondary markets for electricity and natural gas.

The driving force behind the FERC's decision to restructure the electricity and natural gas

industries was its appreciation of the benefits that would flow to consumers as a result of commoditizing these products. For example, commoditization enables a provider to guarantee that a customer will receive a specific product at a designated time. Further, that product should be available from a number of sources. Greater price transparency for the desired product is yet another benefit afforded to the customer as a result of commoditization.

In order to commoditize any product, parties must be provided with incentives to invest in the infrastructure needed to develop a secondary market for that product. For example, in the case of electricity, the producers of megawatts must have the right incentives to invest in power plants. Similarly, in the case of natural gas, producers must have the right incentives to drill, as well as to develop and maintain the infrastructure needed to deliver the gas from the wells to the customers in different regions of the country.

As the Commission seeks to apply these lessons to radio spectrum, it should consider carefully the benefits that will flow to consumers from creating a secondary market. These benefits will stem from the existence of a less restrictive regulatory environment that encourages parties not only to purchase spectrum but also to invest in the infrastructure necessary to achieve the most valuable and efficient use of spectrum.

Ultimately, in order to be commoditized, a market requires products that are readily identifiable and fungible. For example, an electricity consumer in need of additional megawatts for a short period is generally indifferent as to the source of that power. Similarly, barrels of crude oil may be purchased from a variety of resources, and BTUs of natural gas are available from numerous different wells. Fiber bandwidth is similarly fungible as a telecommunications carrier or even a large commercial customer with an internal network generally is indifferent as to the particular fiber route

on which its data is carried, as long as a certain capacity is obtained over a certain route.

Secondary markets work best when product units are fungible, because the universe of potential buyers and sellers is not restricted by the unique characteristics of the products being bought and sold. In attempting to achieve a secondary market for spectrum, one of the Commission's greatest challenges will be to develop policies that will allow market-makers to access spectrum to be "sold" without being limited to particular spectrum bands or particular radio service allocations. The Commission must make various areas of the radiofrequency spectrum virtually transparent to the user, by encouraging the creation of technology and markets that permit "use" on the spectrum that is virtually frequency transparent.

In order to fully commoditize a given product, the market should be capable of liquidity. For example, there should be sufficient supply so that a failure to deliver can be cured in the market, albeit at a different price. If a seller is unable to deliver in accordance with its contractual obligation and the supply is short and the price has increased, the excess costs that typically characterize such a short-term purchase must be borne by the seller. Similarly, if a purchaser refuses to take delivery, there must be a market for the sale of the undelivered goods; in this case, if supply has increased (and thus prices have fallen), the seller may be forced to accept a lower price at the buyer's expense.

Moreover, because there may be a substantial market for such products, the opportunity exists for parties to engage in physical or financial trading of a commodity, hedging the purchaser and seller against market volatility by allowing them to lock in long-term prices well ahead of anticipated deliveries, while the market for the contract itself fluctuates to reflect shorter-term supply and demand. To achieve such liquidity, however, Enron submits that regulators must exercise minimal regulatory oversight over the contracting parties (*i.e.*, purchasers and sellers).

Excellent examples for the Commission to consider can be found in the regulatory and legislative reforms that have occurred in the natural gas and electricity industries during the past decades. In recent years, Congress and the FERC have removed many entry barriers and generally relaxed the regulatory scheme formerly imposed on these industries to allow market forces to play a prominent role in determining the methods of distribution and pricing for natural gas and electricity.<sup>5</sup>

The use of standardized contracts (*e.g.*, Master Purchase and Sale Agreements) by purchasers and sellers has further enabled FERC to reduce its level of regulatory oversight over quality and delivery issues. As a direct result of these reforms, “spot” markets in both industries have developed, the number of manufacturers, carriers, and retailers has increased, more efficient methods of distribution have emerged, and the end consumer has the ability to choose from a wide variety of suppliers and products.

The Commission has been similarly effective in reducing the regulatory requirements imposed on the owners and developers of domestic facilities utilized for the provision of broadband capacity that is being traded as a commodity. The FCC has eliminated the requirement for obtaining any certification for the construction of landline facilities, finding that such construction is no longer a monopoly enterprise.<sup>6</sup> Moreover, the Commission and Congress have further reduced federal and

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<sup>5</sup> Specifically, starting in the mid-1980's, the FERC reduced the restrictions placed upon the contracting power of manufacturers, carriers, and retailers. *See, e.g., Regulation of Natural Gas Pipelines after Partial Wellhead Decontrol*, Order No. 436, 50 Fed. Reg. 42408 (October 18, 1985) (permitting natural gas retailers to abrogate contracts with carriers); *Pipeline Service Obligations and Revisions to Regulations Governing Self-Implementation Transportation Under Part 284 of the Commission's Regulations*, Docket No. RM91-11-000; Docket No. RM87-34-065, Order No. 636, 51 FERC 61030 (1992) (requiring pipelines to unbundle sales service from transportation service and creating a greater number of unbundled services in transportation and storage segments of natural gas industry). In 1996, the FERC adopted rules requiring incumbent utilities to provide open access to their facilities. *See Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, Docket No. RM95-8-000, Docket No. RM94-7-001, Order No. 888, 75 FERC 61080 (1996).

<sup>6</sup> *See* 47 C.F.R. § 63.01(a); *Implementation of Section 402(b)(2)(A) of the Telecommunications Act of*

local barriers to entry in the exchange and exchange access markets,<sup>7</sup> thereby reducing the regulatory risk associated with investment in the infrastructure needed to assure a liquid market for bandwidth. Enron envisions equivalent benefits flowing to consumers of wireless communications services if regulatory reforms are introduced that allow a genuinely competitive secondary market in spectrum to emerge.

In fact, the regulatory characteristics associated with the competitive markets for natural gas and electricity generally do not exist today in the Commission's spectrum allocations and licensing policies. Since the Commission allocates spectrum for specific radio services, a spectrum purchaser generally will be restricted with regard to the services it may offer, notwithstanding the market demands in any given location. Even if an entrepreneurial secondary market assignee could obtain spectrum within a particular radio band, the current allocation policies make it difficult for the assignee to obtain rights to, and similarly configure adjacent spectrum bands allocated for different radio services, or even bands within a reasonable range of use, if such additional rights are needed to create the critical mass of spectrum that would make infrastructure investment worthwhile.

Indeed, the FCC's transfer of control policies are so cumbersome that licensees typically are

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*1996; Petition for Forbearance of the Independent Telephone & Telecommunications Alliance, Report and Order in CC Docket No. 97-11 and Second Memorandum Opinion and Order in AAD File No. 98-43, 14 FCC Rcd 11364, 12-13 (1999); Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations Therefor, First Report and Order, 85 FCC 2d 1 (1980).*

<sup>7</sup> See 47 U.S.C. § 253; see also *Silver Star Telephone Company, Inc. Petition for Preemption and Declaratory Ruling*, 9 CR 617, *Memorandum Opinion and Order*, 12 FCC Rcd 15639 (1997), *recon. denied*, 13 FCC Rcd 16356 (1998), *aff'd*, *RT Communications, Inc. v. FCC*, 201 F.3d 1264 (10<sup>th</sup> Cir. 2000) (preempting state regulation precluding new LEC entry); *AVR, L.P. d/b/a Hyperion of Tennessee, L.P. Petition for Preemption of Tennessee Code Annotated Sec. 65-4-201(d) and Tennessee Regulatory Authority Decision Denying Hyperion's Application Requesting Authority to Provide Service in Tennessee Rural LEC Service Areas, Memorandum Opinion and Order*, 14 FCC Rcd 11064 (1999) (same); *The Petition of the State of Minnesota for a Declaratory Ruling Regarding the Effect of Section 253 on an Agreement to Install Fiber Optic Wholesale Transport Capacity in State Freeway Rights-of-Way, Memorandum Opinion and Order*, 14 FCC Rcd 21697 (1999) (determining that state agreement for public right-of-way use has potential to violate Section 253(a)).

unable to turn over the use of any spectrum to third parties, even for new and innovative services that might not interfere with the licensee's own use. Unless the licensee is willing to maintain "*de facto* and *de jure*" control over the use of its spectrum, it is obligated to seek Commission approval for any new use, even if that use arguably meets the service specific requirements imposed under the Commission's allocation scheme.

#### **IV. CURRENT REGULATIONS HINDER THE EFFICIENT USE OF SPECTRUM**

In the *NPRM*, the Commission generally seeks comment on how best to promote the efficient use of spectrum.<sup>8</sup> The Commission recognizes that current regulations may inhibit the development of secondary markets unnecessarily and asks how it may reduce these burdens.<sup>9</sup> Enron recognizes that a minimal set of well-defined rules may be needed to prevent harmful interference among co-channel and adjacent channel users. Nevertheless, Enron supports the Commission's conclusion that the current regulatory process hinders the efficient use of spectrum and must be reformed in order to create a secondary market for spectrum.<sup>10</sup>

##### **A. The Spectrum Allocation and License Assignment Processes Preclude the Creation of a Well-Functioning Secondary Market**

Historically, the Commission has allocated spectrum among broad categories of users and for specific categories of use in lengthy rulemaking proceedings. The agency often is forced to choose among a myriad of worthy proposals for the allocation of a particular band or bands of the radio

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<sup>8</sup> *NPRM* at para. 3.

<sup>9</sup> *Id.*

<sup>10</sup> Enron's recommended changes are set forth in Section V below.

spectrum.<sup>11</sup>

Use of the spectrum is limited not only as to the technical characteristics that must be met, but also as to the services and types of emissions that may be used within the spectrum. The use of competitive bidding as a more efficient, market-based means of licensing the spectrum has not led the Commission even to consider allowing a winning bidder/licensee to have free rein to use its spectrum in any manner that suits its purpose. Instead, the Commission has consistently chosen the specific radio service or services for which the spectrum may be used.<sup>12</sup> As a result, the Commission's allocation scheme may be perceived as having impeded technological innovation.<sup>13</sup> Thus, even if an entrepreneur could obtain some spectrum directly from a licensee to be used in a unique and advanced fashion or that might further fulfill an underserved need for specific radio services, it would be subject to time-consuming waiver processes or a lengthy rule making.

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<sup>11</sup> For example, in a recent notice of proposed rule making regarding the reallocation of spectrum previously allocated to federal government use at various bands, including at 1.4 GHz, the Commission noted that "there is insufficient spectrum available to accommodate all of the petitions and requests before the Commission." *In the Matter of Reallocation of the 216-220 MHz, 1390-1395 MHz, 1427-1429 MHz, 1429-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, and 2385-2390 MHz Government Transfer Bands*, ET Docket No. 00-221, RM-9692, RM-9797, RM-9854, *Notice of Proposed Rulemaking*, FCC 00-395 (rel. Nov. 20, 2000) ("1.4 GHz Notice"), at para. 30.

<sup>12</sup> The notable modest exception to this general rule is in the Commission's proceeding to adopt rules applicable to former government spectrum for the General Wireless Communications Service. *See Allocation of Spectrum Below 5 GHz Transferred From Federal Government Use*, 11 FCC Rcd 624 (1995), at paras. 12-28. Even in this proceeding, however, the Commission maintained restrictions against the use of this spectrum for broadcast, radiolocation, and certain satellite services.

<sup>13</sup> See, e.g., *Review of the Pioneer's Preference Rules and Amendment of the Commission's Rules to Establish New Personal Communications Services*, ET Docket No. 93-266, Gen Docket No. 90-314, *Memorandum Opinion and Order On Remand*, 9 FCC Rcd 4055 (1994), at paras. 14-18; *Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, To Reallocate the 29.5-30.0 GHz Frequency Band, To Establish Rules and Policies For Local Multipoint Distribution Service And For Fixed Satellite Services; Petitions for Reconsideration of the Denial of Applications for Waiver of the Commission's Common Carrier Point-To-Point Microwave Radio Service Rules; Suite 12 Group Petition For Pioneer Preference*, CC Docket No. 92-297, *Second Report and Order, Order on Reconsideration, and Fifth Notice of Proposed Rulemaking*, 12 FCC Rcd 12545 (1997) (statement of Commissioner Chong, dissenting in part) (stating that eligibility rules adopted in proceeding discouraged competition and precluded potential competitors from branching out into new markets and developing new services).

The FCC's current approach to frequency allocation simply does not lend itself easily to the use of any particular spectrum in a fashion that is not consistent with the radio services the Commission has identified. Spectrum is not really "fungible" as it may not be substituted with other spectrum to meet immediate or long-term market needs without engaging in lengthy FCC processes. Thus, the FCC's processes prevent spectrum from flowing freely and most efficiently. Moreover, when entire categories of use are prohibited in a band, the incentives to invest in infrastructure necessary to accommodate new or different services are reduced, and the universe of possible use for the spectrum is restricted. For a robust secondary market for spectrum to develop, the Commission must revise its allocation scheme and relax its service rules where appropriate.

Although a "secondary market" for spectrum can be said to exist in a variety of different contexts, this market is constrained by the FCC's regulatory processes. While a licensee theoretically has no property right to the spectrum, licenses -- and the right to use the spectrum -- are regularly sold by licensees, subject to the FCC's approval of the qualifications of the assignee. Thus, in a real sense, licenses are "sold" in the marketplace on a regular basis. Moreover, even the use of the spectrum is marketed in a "wholesale" environment. For example, the FCC's rules encourage -- indeed mandate -- that CMRS licensees permit the resale of their services, and resellers are allowed to purchase service on a carrier's network on a long-term basis and then offer that service for a variety of different service lengths to third party customers. A "secondary market" already exists in the sale of satellite transponder capacity; the licensee typically owns and operates a satellite and then sells short- or long-term use of satellite transponders to third parties, some of whom operate earth station facilities and others of whom may further sell and resell the use of those transponders for short or long-term uses to retail customers. In each of these cases, however, the actual use to which

the spectrum may be put is restricted by the FCC's allocation of the spectrum.

In addition to the limitations posed by the allocations process, the licensing process constrains the number and types of entities that may actually obtain spectrum directly from the Commission. Under the FCC's current licensing methodology, the Commission determines the particular frequency, geographic area and bandwidth associated with each class of licenses. Since most commercial licenses are assigned through competitive bidding, prospective bidders must have sufficient capital available to compete in auctions for the right to acquire these licenses – capital requirements which may be based on spectrum or geographic characteristics extending well beyond the prospective bidder's actual desires or needs.<sup>14</sup>

A fundamental obligation of every licensee is to maintain both “*de jure*” and “*de facto*” control over the spectrum. As a result, once a party is successful in obtaining a license, the FCC's assignment and transfer rules create a cumbersome and difficult process for allowing other entities to utilize the licensed spectrum. While the Commission allows licensees to partition or disaggregate parts of their licensed bands or territories, these are permanent assignments covering the balance of the license term. There is simply no easy mechanism for allowing short-term, smaller area use that does not constitute the assignment of license title to an entrepreneur that is unable to compete for a license. The regulatory structure imposed by the Commission does not provide the necessary flexibility and fluidity to allow the market to operate efficiently.

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<sup>14</sup> Since auctions provide very limited opportunities to acquire large quantities of spectrum in some geographic areas, certain spectrum licensees (typically larger entities who can afford the long-term investment) obtain as much spectrum as they can reasonably afford when the opportunity arises, regardless of their current need, to avoid being short on capacity when such demand rises. Thus, the current regulatory structure encourages licensees to obtain more spectrum than needed, store excess capacity, and inefficiently use their spectrum rights.

**A. Spectrum License Costs Are an Impediment To Diversified Participation in New Spectrum-Based Services**

In the Commission's current regulatory structure, parties interested in obtaining spectrum must commit substantial capital in order to obtain a license, either through the auction process or as a result of an approved transfer or assignment of the license or some part thereof.<sup>15</sup> Moreover, because the FCC requires licensees to maintain control of their spectrum, it is typically the licensee who must also commit a substantial amount of capital to develop the infrastructure for providing its services.

While both the governing statute and the Commission's rules seek to promote the interests of small and historically undercapitalized businesses in obtaining access to spectrum, the legal structure currently in place for assigning spectrum precludes diversified participation. A small business that is interested in providing a new service well-suited to a particular frequency band, but requiring only a small fraction of the band, currently has difficulty obtaining access to spectrum even if the desired spectrum does not interfere with services actually authorized by the Commission. That same small business is reduced to negotiating with license holders. Even if a disaggregation agreement can be reached, the time involved in the process discourages niche service providers from entering the spectrum market.

Enron believes that these types of barriers stifle the development of new technology and services. To the extent that the Commission can eliminate particular impediments to the transferability of spectrum assignments and encourage the availability of new and varied services, a

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<sup>15</sup> See, e.g., 47 U.S.C. § 309(j)(3), (4) (establishing the objectives of competitive bidding) and 47 C.F.R. § 1.2110 (establishing special provisions applicable to the participation of "designated entities" in auctions). The cost of obtaining spectrum in certain frequency bands puts it out of reach for most small businesses. For example, in the recently concluded auction of C & F Block PCS spectrum in the 1.9 GHz band, the average winning bid for a 10 MHz license in the Washington, D.C. market was \$184,024,080.

secondary market for spectrum will evolve.

**C. The Commission's Service and Eligibility Rules Are Too Rigid and Must Be Relaxed**

In its *Policy Statement*, the Commission recognizes the effects of rigid service rules on the development of secondary markets as follows:

Secondary markets can be expected to function best when licensees are free to transfer spectrum usage rights to different uses and users with a minimum of administrative review. Restrictions on the kinds of services that may be provided on licensees' right to use spectrum reduce the scope and potential of secondary trading, and, at a minimum, impose additional cost and delay as licensees must seek waivers or rule changes.<sup>16</sup>

Enron agrees that the application of rigid service rules and eligibility requirements over a licensee's ability to transfer its spectrum poses a significant obstacle to the development of a genuinely competitive secondary market and results in the warehousing and underutilization of spectrum. Enron submits that licensees and other spectrum users should be permitted to adapt their individual usage of the spectrum to meet the changing demands of consumers, provided such use can be accomplished without interfering with the rights of other licensees in the same or adjacent bands. The ability to obtain spectrum in a secondary market must be unlimited, unrestricted, and generally permissible without prior Commission approval.

**V. THE COMMISSION SHOULD STRUCTURE A REGULATORY ENVIRONMENT CONDUCTIVE TO THE DEVELOPMENT OF AN EFFICIENT SECONDARY SPECTRUM MARKET**

Enron strongly commends the Commission for its effort to enhance the development of secondary markets in spectrum in order to promote more efficient use of this valuable public resource. Moreover, Enron respectfully encourages the Commission to take the following initial

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<sup>16</sup> *Policy Statement* at para. 26.

steps toward constructing the appropriate regulatory environment that will foster these markets:

(1) increase the flexibility of service rules in the use of certain commercial spectrum; (2) enact regulations that will protect licensees and intermediaries against the impact of rules violations by the ultimate users of spectrum; (3) streamline reporting and prior approval requirements imposed on licensees whose spectrum is being used by secondary users; (4) encourage the private sector to adopt and utilize a standardized contract for the “purchase and sale” of spectrum; and (5) implement a pilot program where the Commission may apply these suggested steps in an effort to test the operation and level of efficiency or a secondary market for spectrum.

**A. Certain Minimum Reforms Are Required**

**1. Service Rule Relaxation**

In the *NPRM*, the Commission requests comment on whether steps may be taken to harmonize its service rules so that spectrum may become increasingly fungible in secondary markets.<sup>17</sup> The *NPRM* also asks whether the Commission should modify its various service rules to allow spectrum to be used for radio services other than those for which it was licensed,<sup>18</sup> and whether it should promote the fungibility of spectrum across services in circumstances in which this approach would promote leasing or other market trading.<sup>19</sup> As noted above, for any secondary market to develop, a clearly defined and fungible product must be identified. Although the concept of spectrum as a tradable resource poses unique challenges due to interference concerns and geographic restrictions, the Commission must create a regulatory environment that fosters liquidity and

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<sup>17</sup> *NPRM* at para. 92.

<sup>18</sup> *Id.* at para. 95.

<sup>19</sup> *Id.*

fungibility to the maximum extent possible if it sincerely wishes to develop an efficient secondary market for spectrum.

Enron recognizes that the abandonment of service specific rules represents a major change in the FCC's approach to spectrum allocations. Nevertheless, Enron encourages the Commission to relax its service rules in at least some portion of a licensee's authorized spectrum to permit potential purchasers to consider different spectrum bands as technically neutral frequencies which may be employed to provide any service that the market requires. The rules must not prevent spectrum users adapting their spectrum to provide services that meet the demands of the market on both a short-term and long-term basis. Allowing licensees to transfer their spectrum free of particular radio service restrictions will lead to more efficient utilization of spectrum.

The Commission indicates some concern in the *NPRM* that the removal of service specific rules and eligibility requirements may be problematic<sup>20</sup> For example, in the *NPRM*, the Commission inquired about the application of construction requirements to holders of spectrum and in particular whether to allow licensees to rely on the activities of their lessees to establish satisfaction of applicable construction requirements.<sup>21</sup> Enron believes that in a liquid spectrum market in which spectrum is freely available for use, the spectrum will flow naturally to parties who intend to use it, making construction requirements unnecessary. The existence of a well-functioning secondary market will minimize the incentives for licensees to warehouse spectrum, mitigating the need for the Commission to impose construction requirements on spectrum made available in the secondary market. At a minimum, because such requirements could discourage both licensees and lessees from

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<sup>20</sup> *Id.* at para. 23

<sup>21</sup> *Id.* at para. 50.

participating in the secondary market, the Commission should refrain from requiring licensees to oversee the service and operational status of spectrum lessees.

## **2. Transparent Pricing**

In addition, an efficient secondary market requires transparent pricing of products. Interested buyers and sellers must be able to easily obtain pricing information. In the *NPRM*, the Commission seeks comment on whether it should have a significant role in collecting and disseminating spectrum information.<sup>22</sup> Enron supports, in part, the Commission's conclusion that the private sector is well-suited to fill this function. However, in order to facilitate the operation of the secondary market, Enron believes that the Commission also must assume a certain level of responsibility in facilitating improved access to information about spectrum already on the Commission's website, including information on file with the Commission which is not currently available on that website.

For example, as a result of the involvement of several of the Commission's bureaus (*i.e.*, the International Bureau, the Wireless Telecommunications Bureau, and the Office of Engineering and Technology) in this worthy endeavor to create a secondary market for spectrum, pertinent licensee information is scattered among the individual web pages of the respective bureaus. The Commission should develop a method for consolidating this information in an organized fashion, so that spectrum information may be more readily available to potential buyers and sellers, facilitating their interest and involvement in existing opportunities in a secondary market.

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<sup>22</sup> *NPRM* at paras. 99-100.

### **3. Responsibility for Compliance with the Commission's Rules**

In the *NPRM*, the Commission proposes a general model for spectrum leasing in which licensees are permitted to lease their rights to use spectrum to third party users in any geographic or service area, in any quantity of frequency, and for any period of time during the term of their licenses without prior Commission approval.<sup>23</sup> This approach assumes that licensees will remain responsible to the Commission for compliance with all of their obligations under the Communications Act and the Commission's rules. The Commission further explains that it intends to hold the licensee responsible for any non-compliance by any lessee, and presumes that the lessee will be subject to the consequences of any non-compliance by the licensee.<sup>24</sup>

While Enron strongly supports the Commission's proposals, particularly its recognition that increased flexibility must exist in its leasing policy, a secondary market will attract buyers and sellers if only the licensee and the party actually transmitting on the spectrum are held responsible for complying with the Commission's rules and regulations. Both the licensee and any transmitting users will require some assurances from the Commission that the failure of the other to comply with FCC regulations will not threaten their continued use of the spectrum.<sup>25</sup> If such protections are absent, rights to use spectrum would be subject to termination, and parties will not participate in a secondary market which has such unmanageable risks.

Similarly, intermediaries who do not transmit on the spectrum, but merely trade in spectrum

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<sup>23</sup> *Id.* at para. 20

<sup>24</sup> *Id.* at para. 29.

<sup>25</sup> The Commission could, for example, agree to give notice of such revocation proceedings to any holder of spectrum that has registered its rights with the agency; not unlike a tenant who records its lease, this would allow spectrum holders an opportunity to protect themselves if they choose to do so. Some mechanism is necessary to protect holders of spectrum against the licensee's non-compliance.

for short periods of time, must be protected in some way from the failure of a licensee or a transmitting user to comply with FCC regulations. Without such protection, intermediaries also will have a strong disincentive from participating in the secondary market. The regulatory model for the secondary market of spectrum must not discourage or preclude the participation of any potential market participant.

Finally, Enron submits that, for the right to transfer spectrum, the Commission should encourage the use of a standardized contract to be developed by industry participants and potential market entrants. By encouraging the private sector to develop such an agreement, Enron believes that many of the compliance obligations can be resolved. For example, the agreement could contain uniform provisions for liquidated damages and delivery failure, while still enabling purchasers and sellers to tailor their individual contracts with regard to levels of quality of service and interference protection. In both the natural gas and electricity industries, such master agreements have been developed.<sup>26</sup> A similar initiative should be encouraged by the Commission in developing secondary markets for spectrum.

#### **4. Required Content of a Lease Agreement**

In the *NPRM*, the Commission seeks comment on whether it should adopt rules requiring contractual provisions in leasing arrangements which would ensure that a spectrum lessee agreed to comply with all applicable Commission rules, including those that may be imposed at a later time; to accept FCC oversight and enforcement consistent with the licensee's license; and to cooperate fully

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<sup>26</sup> See Attachment 1 hereto for sample agreements used in the natural gas and power industries.

with any investigation or inquiry conducted by either the Commission or licensee.<sup>27</sup> As previously stated, Enron supports the creation of a standardized contract for industry participants that would contain certain uniform terms and conditions. Moreover, Enron emphasizes that these terms and conditions should be developed by industry members, and not by the Commission as part of its regulations. Enron certainly would appreciate any guidance that the Commission wishes to provide in this regard. However, for a genuinely competitive and efficient secondary market to develop, the Commission should refrain from regulating additional parties beyond the licensee and spectrum user with regard to ensuring compliance with applicable rules.

## **5. Minimal Reporting Requirements**

It is critical, therefore, that the FCC permit spectrum to be transferred without prior Commission approval. Removing cumbersome approval and reporting requirements as a condition to the transfer of spectrum assures the efficiency of market mechanisms, which in turn will permit the market to allocate spectrum more efficiently, ultimately benefiting the public interest.

In this regard, Enron believes that the Commission should refrain from imposing significant reporting requirements upon any participants in a secondary spectrum market. At most, reporting requirements should be limited to the licensee and to any holder of spectrum that actually transmits on the spectrum. Enron believes that a secondary market will not operate efficiently if (a) any holder of spectrum is required to obtain Commission approval before obtaining or transferring its spectrum; (b) reporting requirements are imposed on intermediaries that do not actually use the spectrum to transmit; and (c) licensees are burdened with substantial reporting requirements concerning spectrum they have transferred.

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<sup>27</sup> *NPRM*, at para. 30.

For specific spectrum holders, however, the Commission should continue to require certain reporting requirements. For example, those spectrum holders that are actually transmitting on the spectrum should be required to file minimal reports with the Commission; such reports could provide other users with sufficient information to allow the private sector to resolve most interference problems among actual spectrum users without resorting back to the licensee or the Commission. Moreover, holding a spectrum user that actually transmits on the spectrum minimally accountable to the Commission for compliance with technical rules should not be an undue burden on such user.

**B. The Commission Should Develop A Pilot Program To Test the Operation of a Fluid Secondary Market**

Enron recognizes that the creation of an efficient secondary market will require a major change in the FCC's current approach to spectrum allocation, licensing, and transfers. With that in mind, Enron submits that the Commission should consider testing on a limited scale and for a set experimental time period whether, and if so to what extent, a secondary market for spectrum usage rights is feasible. The Commission should attempt to allow market forces to operate as freely as possible in a pilot program in a limited set of frequency bands.

In the pilot, the Commission should impose few or even no service restrictions or requirements on the spectrum, thereby permitting spectrum to be as fungible as possible. A fixed-term pilot would allow the Commission to assess whether certain regulatory barriers and requirements continue to impede the efficient use of spectrum; whether greater protection against interference and other technical issues need to be addressed; and whether significant reliance on market forces through an open secondary market promotes more efficient utilization of spectrum and serves the public interest. Further, conducting a pilot will enable the Commission to better shape the

regulations intended to produce the most effective and efficient secondary market in the future.

To implement the pilot, Enron recommends the following two scenarios. First, the Commission could adopt a certain amount of regulatory flexibility for all commercial licensees in a given frequency band or bands by allowing up to 50% of their spectrum to be leased or otherwise exchanged free of eligibility requirements and service restrictions *other than interference criteria on a co-channel and out-of-band basis*. However, an even broader pilot program could be implemented by identifying spectrum not currently allocated to any particular service and for which there are multiple potential uses. An excellent candidate for this pilot program might be the government transfer bands, at 3650-3700 MHz and/or 4940-4990 MHz. These bands present attractive possibilities since both were previously reserved for federal government use, and there are, therefore, few incumbent licensees who would be affected by such a program. Moreover, the competitive bidding for such licenses would reflect the value that bidders placed on the spectrum not merely for their own use, but also for secondary market purposes.<sup>28</sup> Since the Commission has not yet imposed strict service rules on either band, no further rulemakings would be needed to make such a “flexible” allocation.<sup>29</sup> Both the Commission and the private sector should gain valuable experience in learning how to apply any lessons learned from the pilot to the rest of the spectrum.

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<sup>28</sup> See *Amendment of the Commission's Rules With Regard to the 3650-3700 MHz Government Transfer Band; The 4.9 GHz Band Transferred from Federal Government Use*, ET Docket No. 98-237; RM-9411; WT Docket No. 00-32, *First Report and Order and Second Notice of Proposed Rulemaking*, FCC 00-363 (rel. Oct. 24, 2000), at para. 43 (stating that the Commission has allocated the 3650-3700 MHz band to terrestrial services on a nationwide co-primary basis and grandfathered 82 non-Federal Government FSS earth stations at 49 sites and three Federal Government radiolocation operations).

<sup>29</sup> See *id.* at 45-47.

## **VI. THE PUBLIC INTEREST WILL BE SERVED BY ALLOWING A SECONDARY MARKET FOR SPECTRUM TO OPERATE MORE EFFICIENTLY**

The Commission's current licensing scheme embraces the underlying principle that market forces function effectively to ensure that spectrum is ultimately allocated to those who assign it the greatest value. Enron believes that these same forces, if allowed to operate in the context of a secondary market for spectrum, will produce significant public interest benefits.

### **A. Allowing Spectrum To Flow Efficiently To Parties Exhibiting the Highest Demand Will Benefit the Public Interest**

#### **1. Existing Licensees Will Seek More Efficient Use of Their Spectrum**

In an efficient secondary market, licensees should be able to realize monetary gain by leasing or assigning their spectrum to interested buyers. The ability to freely assign spectrum will lead spectrum licensees to use only the bandwidth they truly need, which in turn will generate as much excess capacity as possible. Licensees will have an economic incentive to intensely police their own spectrum use and needs in order to maximize their opportunities. Likewise, each market participant will have an incentive to guard the value of its investment, thereby encouraging it to address interference and power emission issues with adjacent spectrum users.

#### **2. The Development of New Use for Spectrum Should Assist the United States In Maintaining Its Technology Leader Status**

The economic incentive to maximize efficient spectrum use will drive market participants to develop new spectrum-efficient services and technology. As spectrum becomes more marketable, pricing mechanisms will also develop for spectrum use of varying duration, channel size and geographic scope. Such pricing mechanisms should create a greater demand for more spectrum efficient technology capable of providing similar or varied services with less bandwidth.

Further, secondary markets that encourage spectrum "fungibility" will foster the development

of technology that allows for broader use of different spectrum bands for similar purposes.<sup>30</sup> The Commission has already recognized the substantial advantages to be gained by the development of such technology.<sup>31</sup> However, the Commission is faced with the possibility that current spectrum allocation methods act as a deterrent to American manufacturers.<sup>32</sup> Enron believes that the emergence of an efficient secondary market for spectrum will heighten the demand for innovative technology and speed the deployment thereof.<sup>33</sup> The secondary market initiative should further encourage the growth of these technological developments, while concurrently creating new markets to assist the United States in its effort to remain the world's technology leader.

**B. Sound Spectrum Management Policy Should Rely Increasingly on Market Forces**

The Commission's experience with spectrum auctions demonstrates the opportunities for increased efficiencies. Building upon this experience, it is clear that the more efficient and fluid the mechanisms behind the secondary market, the greater the assurance that spectrum will be utilized to its utmost efficiency. Enron submits that a well-functioning secondary spectrum market should attract new entrants and result in genuine competition, furthering the objectives developed for the competitive bidding licensing process. Moreover, if a secondary market emerges successfully, the

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<sup>30</sup> The creation of a fluid secondary market specifically addresses objectives that were established by Congress for spectrum licensing and are set forth in section 309(j)(3) of the Communications Act, including "the development and rapid deployment of new technologies, products, and services for the benefit of the public," "the dissemination of licenses among a wide variety of applicants," and the "efficient and intensive use of the electromagnetic spectrum." 47 U.S.C § 309 (j)(3).

<sup>31</sup> See, e.g., *Authorization and Use of Software Defined Radios*, ET Docket No. 00-47, *Notice of Proposed Rule Making*, FCC 00-430 (rel. December 8, 2000).

<sup>32</sup> See *FCC Report to Congress on Spectrum Auctions*, 13 FCC Rcd 9601, 9611-12 (1997) (discussing the introduction of new technology since the inception of auctions as a spectrum allocation method).

<sup>33</sup> The Commission's experience with market-based licensing methods demonstrates the potential for the development of spectrum efficient technology.

government ultimately may be freed from determining how to allocate commercial spectrum in order to ensure its best use.

## **VII. CONCLUSION**

Enron believes that this proceeding is indicative of the Commission's strong commitment toward encouraging new and exciting advances in spectrum use. Through the creation of a secondary market in spectrum where participants are able to buy, sell, lease, sublease, or eventually trade spectrum for varying periods of time and for numerous purposes, Enron anticipates a marketplace in which consumers, regardless of geographic location, will not only have access to service, but to an enhanced choice of services.

Competition in the development of spectrum-efficient technology that evokes the promise of spectrum-efficient services will drive prices down and provide viable solutions to the digital divide, universal service and the last mile conundrum. The United States will have an additional advantage in its effort to remain the world's technology leader. For all of these reasons, Enron supports the

creation of a secondary market for spectrum and urges the Commission to adopt the regulatory reform measures mentioned herein.

Respectfully submitted by,

A handwritten signature in black ink, appearing to read 'J. Cohen', is written over a horizontal line.

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